

Abstract

A heat exchanger system for cooling a fiber includes an outer tube section, an inner tube section disposed within and separated a selected distance from the outer tube section to form an annular gap therebetween, and a plurality of fins extending transversely from internal peripheral wall portions of the inner tube section toward a central axis of the inner tube section. The inner tube section includes an internal passage configured to receive and cool the fiber as the fiber moves through the heat exchanger, and the fins facilitate heat transfer between a cooling medium flowing through the annular gap and a coolant fluid flowing within the inner tube section during system operation.